

HST Servicing Mission-3A Mission Success Criteria

Office of Space Science
NASA Headquarters

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HST Servicing Mission-3A

Mission Success Criteria

The objectives of Hubble Servicing Mission 3A (the third servicing mission since launch) are to replace failed gyroscopes, restore other original capability, make life-extending changes, and improve HST's productivity. These activities are consistent with Hubble's design philosophy: science instruments and spacecraft components with improved or expanded capabilities are installed to take advantage of state-of-the-art advances, and spacecraft components are replaced as they age.

The payload complement for the mission includes two categories of items:

Category 1. Gyroscopes:

- Six gyroscope replacements (gyroscopes are packaged in "Rate Sensor Units," 2 in each unit for a total of 3 units)

Category 2. Spacecraft maintenance items:

- Six battery charging Voltage/Temperature Improvement Kit installations
- Fine Guidance Sensor replacement
- Multi-Layer Thermal Insulation repair
- Replacement of the central computer with an Advanced Computer
- S-Band Single Access Transmitter replacement
- Tape recorder replacement with a Solid State Recorder

Success Criteria:

For the mission to be considered **fully successful**, the following flight hardware must be installed:

- six operational gyroscopes,
- six voltage/temperature improvement kits,
- the advanced computer, and ...
- the fine guidance sensor.

The remaining Category 2 items will be installed on a time-available basis. Items that are not completed will be rescheduled for a subsequent Hubble servicing mission.

The criteria for **minimum mission success** are that upon release from the shuttle:

- Hubble has 5 operational gyros, at least 4 of which are newly installed.

Approval page follows.

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